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W. L. CUNNINGHAM

1,877,227

AIR VENT PARACHUTE

Filed Aug. 1, 1931

FIG. 1.

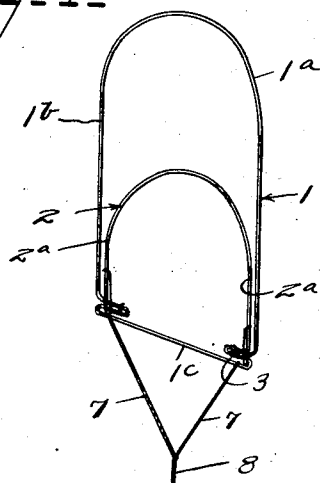


FIG. 2.

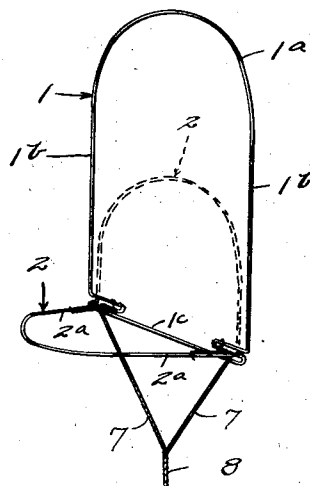


FIG. 3.

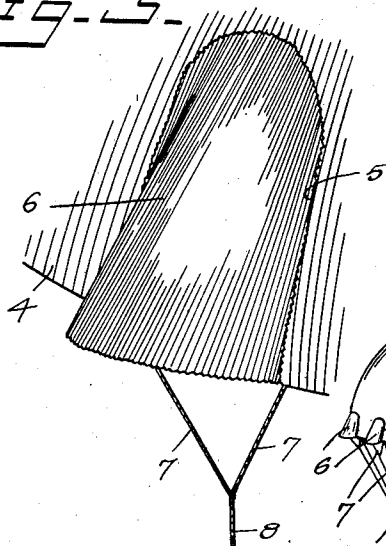


FIG. 4.

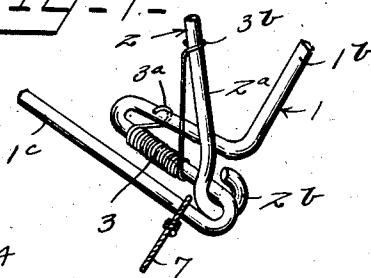
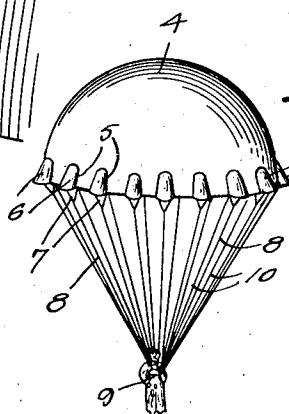


FIG. 5.



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AIR-VENT PARACHUTE

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This invention relates to the class of parachutes and pertains particularly to means for causing the rigid opening of the same.

The primary object of the present invention is to provide a parachute having means associated therewith about the edge thereof which are in the form of air receiving cups and are designed to open up immediately upon the releasing of the parachute from its container or its folded condition to trap and direct air into the main body of the parachute so as to cause the same to open up quickly.

A further object of the invention is to provide a parachute having auxiliary air receiving pockets about the edge thereof, which are positively opened by spring elements which form a part of a frame, the frame and pocket being in folded condition and the spring elements being under tension when the parachute is folded.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming part of this specification, with the understanding, however, that the invention is not confined to any strict conformity with the showing of the drawing but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawing:—

Figure 1 is a view in perspective of the frame for one of the air pockets formed about the edge of the parachute, the same being in folded condition;

Figure 2 is a view similar to Figure 1 but with the frame in the open position which it assumes when the parachute has been released;

Figure 3 is a detailed perspective view of an open air pocket or scoop;

Figure 4 is an enlarged perspective view detailing a portion of one corner of an air scoop or pocket frame.

Figure 5 is a perspective view of an open parachute of the character embodying the present invention.

Referring now more particularly to the drawing wherein like numerals of reference indicate corresponding parts throughout the several views, the numeral 1 indicates generally the reinforcing body frame for one of the plurality of air scoops or pockets which are formed about the edge of the parachute body. Each of these frames as shown, has an arched upper portion 1^a and spaced parallel side portions 1^b and a cross connecting bottom portion or bar 1^c between the lower ends of the side portions 1^b. At their lower ends each of the side portions 1^b is extended inwardly a short distance and then turned back upon itself to extend outwardly to join the adjacent end of the cross bar 1^c thus forming the two spaced inwardly extending arms 1^d and 1^e which are joined at their inner ends in the manner illustrated. The upper end of the arms or the arm 1^d is offset with respect to the lower arm for the purpose hereinafter more fully described.

Associated with each frame 1 is an arcuate loop 2 having the side members 2^a each of which terminates at its free end in an eye 2^b which is closed about the outer end of the adjacent arm 1^e about which the loop oscillates.

The loop 2 has its side members 2^a of materially less length than the side members 1^b of the frame 1 and is designed to swing into a position where it is in substantially the same plane as the frame 1, as illustrated in Figure 1.

Surrounding each of the inwardly extending arms 1^e of each frame is a coil twist spring 3 which has one end formed to provide a hook 3^a which engages about the adjacent arm 1^d while the other end is extended parallel with the adjacent side of the loop 2 and attached thereto as indicated at 3^b at a point removed a substantial distance from the adjacent eye 2^b.

The body 4 of the parachute embodying the present invention may be formed in any suitable manner and of any suitable material and about the edge thereof there is formed a plurality of openings 5 of the same configuration as the frame 1 shown in Figures 1 and 2. Each frame 1 has secured thereto

an edge of a scoop-like cloth body 6 and is also secured in and to the edge of an opening 5, the bar portion 1^c of the frame 1 extending across the open side or mouth of the opening 5 in which the frame is placed. The lower edge of each scoop body 6 is secured to the loop 2 and the body 6 of the scoop is so cut that when the loop 2 is moved to a position where it lies in a plane at right angles to a plane in which the frame 1 lies, it will assume a transversely arcuate form and project from the body of the parachute in the manner illustrated in Figure 3.

The cross bar 1^c of each air scoop frame has attached thereto adjacent each end, one of the free ends of a V-shaped cord 7 to the point of which is connected one end of a cord 8 which leads to the usual harness device 9 which the user of the parachute straps to his body. Additional cords 10 may be connected between the edge of the parachute at points between the scoops 6 and the body harness 9, if desired, as illustrated in Figure 5.

In the use of the present parachute when the same has been folded up in the usual manner, or if the same is to be retained in a carrying case from which it is drawn when placed into use, the loop member 2 of each air scoop or pocket will be folded up into the frame 1 in the manner illustrated in Figure 1 and the spring 3 at each side of each frame will be held under tension. Due to the relative positions of the arms 1^a and 1^b it will be apparent that the loop 2 may assume a folded position wherein it will lie in a plane parallel with the plane in which the adjacent frame 1 lies. When the parachute is released for opening the spring actuated loops 2 will also be released and will be caused to assume the outwardly extended position shown in Figure 2 and thus will operate to immediately open the air scoops about the edge of the parachute body. The scoops will thus immediately pick up quantities of air and direct the same into the parachute and thus cause the same to open rapidly.

Having thus described the invention, what is claimed is:—

1. In a parachute, a main air receiving body having a plurality of openings through the wall and about the edge thereof, a foldable scoop-like body covering each of said openings and when opened designed to project outwardly from the main body and having a lower free edge, and a frame-like body conforming to and secured about said lower free edge of each scoop and hingedly connected with the main body.

2. In a parachute, a main air receiving body having a plurality of openings through the wall and about the edge thereof, a foldable scoop-like body covering each of said openings and when opened designed to project outwardly from the main body and having a lower free edge, a frame-like body

conforming to and secured about said lower free edge of each scoop and hingedly connected with the main body, and resilient means for positively moving each of said frame-like bodies to a position to extend outwardly from the main parachute body to effect the positive opening of the air scoop when the parachute is released for opening.

3. In a parachute, a main air receiving body having a plurality of openings therethrough and disposed about the edge thereof, a foldable body covering each of said openings and having an edge secured to the edge of the opening and further having a lower free edge, each of said foldable bodies being formed in a manner to extend outwardly from the parachute body to provide an air scoop, a reinforcing frame in each of said openings, a loop frame pivotally attached to each reinforcing frame and further having connection with the lower free edge of the adjacent foldable body, and resilient means controlling each loop frame to cause the same to swing outwardly into a plane extending substantially at right angles to the adjacent reinforcing frame to maintain the attached foldable body in open position.

4. In a parachute, a main air receiving body having a plurality of openings therethrough and disposed about the edge thereof, a foldable body covering each of said openings and having an edge secured to the edge of the opening and further having a lower free edge, each of said foldable bodies being formed in a manner to extend outwardly from the parachute body to provide an air scoop, a reinforcing frame secured in each of said openings and having side members connected by a bar at their lower ends, said bar extending transversely of the opening, an inwardly extending pair of arms carried by each side member of each reinforcing frame, a loop body having a pair of side members each terminating in an eye and each eye encircling an arm at one side of the reinforcing frame, said loop body being attached to and following the contour of the free lower edge of the adjacent foldable body, the other arm adjacent each eye constituting a stop for said loop when the latter is swung in one direction, and a spring element carried by an arm of each pair and having connection with the attached loop and normally acting to urge the loop to swing outwardly to a position in a plane extending at right angles to the attached frame.

5. In a parachute, a main air receiving body having a plurality of openings in the wall about the edge thereof, a foldable body secured to the main body over each of said openings, upon the outside of the main body, said foldable body when unfolded forming an air scoop, a frame secured to a free edge of each foldable body to maintain the same in a desired form when the foldable body is

unfolded, the frame being oscillatably connected to the main body, and resilient means carried by the main body and engaging the frame and normally urged to move the same in a direction to unfold the foldable body.

6. In a parachute, a main air receiving body having a plurality of openings in the wall about the edge thereof, a foldable body secured to the main body over each of said openings, upon the outside of the main body, said foldable body when unfolded forming an air scoop, a frame secured to a free edge of each foldable body to maintain the same in a desired form when the foldable body is unfolded, the frame being oscillatably connected to the main body, resilient means carried by the main body and engaging the frame and normally urged to move the same in a direction to unfold the foldable body, a plurality of body suspending cords, and a pair of attaching cords connecting one end of each suspending cord with the main body, said pair of attaching cords, being when in operative position, in downwardly converging relation and having their free ends connected to the main body at opposite sides of the foldable body.

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